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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/429,719	10/29/1999	KATSUHISA ARATANI	P99.2247	6244

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EXAMINER

MCDONALD, RODNEY GLENN

ART UNIT	PAPER NUMBER
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1753

20

DATE MAILED: 04/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/429,719

Applicant(s)
Aratani et al.

Examiner
Rodney McDonald

Art Unit
1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Feb 19, 2002
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-24 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- | | |
|--|--|
| 15) <input type="checkbox"/> Notice of References Cited (PTO-892) | 18) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 16) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 19) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 17) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ | 20) <input type="checkbox"/> Other: |

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatwar et al. (U.S. Pat. 5,948,497) in view of Takeoka et al. (U.S. Pat. 4,647,947).

Hatwar et al. teach a reflecting layer that is a silver-palladium alloy, a silver-copper alloy or a silver-palladium-copper alloy. By maintaining the palladium component of the alloy less than 15 atomic % and the copper component of the alloy less than 30 atomic % the reflectance of the reflecting layer can be similar to the typical gold reflecting layer. (See Abstract)

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The alloy thin films were prepared by co-sputtering silver and palladium and/or copper using d.c. magnetron guns in argon atmosphere. (Column 2 lines 33-35)

Complete compact disks were fabricated using silver alloys and gold films approximately 1000 Angstroms thick. (Column 2 lines 48-49)

Hatwar et al. teach recording at a wavelength of 780 nm. (Column 2 line 30)

The differences between Hatwar et al. and the present claims is that utilizing a single alloy target to deposit the alloy film is not discussed.

Takeoka et al. teach depositing a metal layer of gold (Au), platinum (Pt), palladium (Pd), rhodium (Rh), indium (Ir), copper (Cu), nickel (Ni), cobalt (Co), iron (Fe), manganese (Mn), chromium (Cr), vanadium (V), titanium (Ti), zirconium (Zr), niobium (Nb) and aluminum (Al) as well as silver. These metals may be used singly or *as alloys of two or more components*. It is particularly desirable to use noble metals such as gold, silver, platinum, palladium, rhodium and iridium or alloys of these metals. These metals may be deposited by means of vacuum deposition, electron beam deposition or *sputtering, using them as a target* and argon gas for the plasma. (Column 7 lines 52-68)

The motivation for depositing from a target containing the metals (i.e. them) is that it allows for depositing a layer comprised of that alloy target. (Column 7 lines 52-68)

As to the specific range of compositions and thicknesses, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the portion of the prior art's range which is within the range of applicant's claims because it has been held to be

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obvious to select a value in a known range by optimization for the best results, see *In re Aller*, et al., 105 U.S.P.Q. 233.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified *Hatwar et al.* by utilizing a single target as taught by *Takeoka et al.* because it allows for depositing an alloy layer.

3. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Hatwar et al.* in view of *Takeoka et al.* as applied to claims 17 and 18 above, and further in view of *Ohno et al.* (U.S. Pat. 6,004,646).

The differences not yet discussed is that wavelength utilized for recording.

Ohno et al. suggest that the wavelength for recording/retrieving is at a level of from 630 to 660 nm. (Column 19 lines 8-10)

The motivation for operating at the wavelength of from 630 to 660 nm is that it allows for recording/retrieving information. (Column 19 lines 8-10)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized a wavelength of from 630 to 660 nm as taught by *Ohno et al.* because it allows for recording/retrieving information.

4. Claims 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Ohno et al.* (U.S. Pat. 6,004,646) in view of *Takeoka et al.* (U.S. Pat. 4,647,947).

Ohno et al. teach that to obtain a low volume resistivity in a recording medium a substantially pure Al film having an impurity content of not more than 2 atomic % or a

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substantially pure Au or Ag film having an impurity content of not more than 5 atomic % is preferred. (Column 10 lines 1-5)

When the above reflective layer is a thin film of an Ag alloy, one containing from 0.2 to 5 atomic % of Ti, V, Ta, Nb, W, Co, Cr, Si, Ge, Sn, Sc, Hf, Pd, Rh, Au, Pt, Mg, Zr, Mo, or Mn, is preferred. (Column 10 lines 23-26)

The present invention have confirmed that with the additive element to Al or the additive element to Ag, the volume resistivity increases in proportion to the concentration of the additive element. (Column 10 lines 29-32)

The reflective layer is made of a Ag alloy containing from 0.2 to 5 atomic % of at least one member selected from the group consisting of Ti, V, Ta, Nb, W, Co, Cr, Si, Ge, Sn, Sc, Hf, Pd, Rh, Au, Pt, Mg, Zr, Mo and Mn. (Column 39 lines 50-54) When archival stability is of importance, the additive component is preferably Ti or Mg. (Column 10 lines 26-28)

The reflective layer is usually formed by a sputtering method. (Column 10 lines 45-46)

The crystallizability or the impurity composition in the layer depends on the method for preparation of the alloy target used for the sputtering and the sputtering gas (Ar, Ne, Xe or the like). (Column 10 lines 64-67)

The wavelength for recording/retrieving is at a level of from 630 nm to 660 nm relative to 780 nm for CD-RW. (Column 19 lines 8-12)

650 nm
↓

The reflective layer has a thickness of from 40 to 300 nm. (See Abstract)

400 Å - 3,000 Å

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The difference between Ohno et al. and the present claims is sputtering from an alloy target.

Takeoka et al. is discussed above and teach sputtering from a target containing the required metals. (See Takeoka et al. discussed above)

The motivation for sputtering from a single target the metals (i.e. them) is that it allows for depositing a layer comprised of that alloy target. (Column 7 lines 52-68)

As to the specific range of compositions and thicknesses, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the portion of the prior art's range which is within the range of applicant's claims because it has been held to be obvious to select a value in a known range by optimization for the best results, see *In re Aller*, et al., 105 U.S.P.Q. 233.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Ohno et al. by utilizing an alloy target as taught by Takeoka because it allows for depositing a layer comprised of that alloy target.

Response to Arguments

5. Applicant's arguments filed 2-19-02 have been fully considered but they are not persuasive.

AFFIDAVIT:

Applicant's Affidavit has removed Nee as a reference.

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RESPONSE TO ARGUMENT:

In response to the argument that none of the claims are anticipated nor obvious over the prior art, it is argued that as discussed above the combination of prior art suggests the claimed subject matter.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

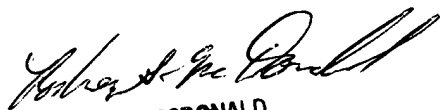
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney McDonald whose telephone number is (703) 308-3807. The examiner can normally be reached on Monday through Thursday from 8:00 to 5:00. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen, can be reached on (703) 308-3322. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


RODNEY G. McDONALD
PRIMARY EXAMINER

RM

April 25, 2002